

From Agriculture To Occupational Diversification: The Impact Of Declining Agricultural Productivity On Livelihood Transformation In Bankura District, West Bengal

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ABSTRACT

Agriculture is usually considered to be the main occupation of the rural households in India. Nevertheless, reduced agricultural productivity in the country has posed challenges in sustaining agriculture and has brought about changes in the rural livelihoods. The current research seeks to examine the impact of reduced agricultural productivity on the diversification of occupations and livelihood change in Bankura district, West Bengal. The research adopted a descriptive cross-sectional design based on primary data collected through a structured questionnaire among rural households, supplemented by secondary data obtained from government documents and literature. The data obtained were analyzed using descriptive statistics and Geographic Information System-based spatial analysis. It was found out that climatic changes, low irrigation, high cost of cultivation and reduced soil fertility have made it difficult for agricultural practices to sustain themselves, leading people to engage in non-agricultural occupations. Therefore, the research suggests that occupation diversification has become an essential approach towards building household resilience in face of reduced agricultural productivity.

Keywords: Agricultural Productivity; Occupational Diversification; Livelihood Transformation; Rural Economy; Non-Farm Employment; Bankura District.

1. INTRODUCTION

The traditional economy of the countryside in India has always revolved around agriculture as it provides employment and livelihoods for a vast majority of the people (Ghosh & Ghosal, 2022). However, owing to decreased agricultural output due to erratic weather patterns, recurring droughts, poor land tenure system, high costs of production, lack of proper irrigation facilities, and climatic changes in the last few decades, the profitability of agriculture has declined in many parts of the country (Kundu & Das, 2022). With the unpredictability of income from agriculture, the rural families have no option but to look for alternatives for earning their livelihood (Chattoraj et al., 2024; Chattaraj, 2023). This process has accelerated occupational diversification, with increasing participation in non-farm activities such as wage labour, construction work, small businesses, service-sector employment, and seasonal migration, thereby reshaping the socio-economic structure of rural communities (Sachdev et al., 2024; Jana et al., 2022; Mandal, 2018).

Bankura district of West Bengal is one such region that has been highly impacted by the issue of agricultural distress and the resulting change in livelihoods (Barua, 2024; Nandi & Sarkar,

2020). The area, with its laterite soils, lack of irrigation facilities, and regular drought conditions, has found it difficult to maintain its agricultural productivity consistently (Bosu et al., 2025; Mukhopadhyay & Mukherjee, 2024). As a result, there have been several changes in the occupations of these households (Hembram, 2025; Shee & Maiti, 2019; Mandal, 2022). It is important to study these changes in order to understand the link between low agricultural productivity and livelihood patterns in rural India (Das, 2025; Chakrabarti, 2023). Hence, the current research tries to explore the role of agricultural distress in transforming the livelihoods of rural households in Bankura district (Mishra & Mishra 2018).

2. REVIEW OF LITERATURE

Roy, Khatun, and Roy (2018) investigated the trend of livelihood diversification in the rural areas of West Bengal and noted that rural households were increasingly diversifying their sources of income other than farming because of the diminishing profit in agriculture, scarcity of land, and seasonal jobs. They stated that apart from farming, non-farming activities, wage labour, small scale business, and migration had started playing a key role in the lives of rural people and helped in ensuring income stability and decreasing dependency on agriculture. The authors concluded that livelihood diversification had emerged as an effective strategy for enhancing household resilience and improving socio-economic well-being.

Ghatak and Kipgen (2024) studied the connection between agriculture, livelihood, and vulnerability among char dwellers of Bankura district, West Bengal. They discovered that vulnerabilities of the rural households have been rising due to uncertainties related to environment, agricultural distress, climatic variations, and limited access to productive assets. Because of all this, households were forced to look for different sources of livelihood other than agriculture, such as non-agricultural activities or migration. They opined that livelihood diversification had become a necessary adaptation strategy.

Pani, Mishra, and Dutta (2024) examined the ecological consequences of varying sources of irrigation and agriculture in West Bengal. The researchers noted that alterations in the methods of irrigation, the use of groundwater, and other factors related to agriculture have had considerable impacts on the productivity and sustainability of agriculture. According to the researchers, changes in water availability and ecological stress have impacted agriculture in terms of its output, making the farmers switch to different practices of agriculture and look for alternate sources of livelihood. The study emphasized that sustainable irrigation management and environmentally sound farming practices were essential for maintaining agricultural productivity and ensuring long-term rural livelihood security.

3. THEORETICAL FRAMEWORK

The research is grounded on the Sustainable Livelihoods Framework (SLF) and the Lewis Dual Sector Approach. The SLF defines how the drop in agricultural production caused by drought, insufficient irrigation, fragmentation of land ownership, and degradation of soil leads to the creation of new ways of earning money. According to the Lewis Dual Sector Approach, lower returns on agriculture lead to labor mobility from agriculture to non-agricultural activities.

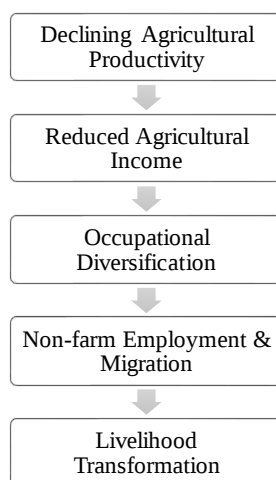


Figure 1: Conceptual Framework

Source: Self generate

Therefore, the hypothesis of the study is based on the idea that low agricultural productivity is the primary cause of occupational diversification by rural households in Bankura district. With reduced reliance on agriculture, rural households have started taking up occupations like wage employment, animal husbandry, business ventures, and migration, which is changing the rural livelihood system.

4. STUDY AREA: BANKURA DISTRICT

Bankura District lies in the western part of the state of West Bengal at latitudes 22°38'N-23°38'N and longitudes 86°36'E-87°46'E. The total geographical area is 6,882 km². Bankura District's soil type is laterite and its topography is undulating. Bankura District enjoys a tropical monsoon climate and has droughts and erratic rains. Agricultural activity forms the chief source of occupation in Bankura District and paddy is the main crop. But due to lack of irrigated land and poor soil fertility, agriculture activity has suffered and thus villagers have found other occupations.

5. METHODOLOGY

The research methodology followed for the study was a descriptive cross-sectional survey design to explore the effects of decreased agricultural productivity on livelihood change in Bankura district. For primary data collection, 150 rural households were selected randomly by following multistage sampling method. For secondary data collection, the Census of India, Directorate of Agriculture (West Bengal), District Statistical Handbook and relevant published documents were referred. The collected data were analyzed using Microsoft Excel and IBM SPSS Statistics Version 26.0 through descriptive analysis like frequency distribution and percentage.

6. VARIABLES

This research focused on the connection between agricultural productivity and livelihood transformation through independent, dependent and socio-economic variables. The variables were useful in analysing the factors affecting occupational diversification of rural households in Bankura district.

Table 1: Variables Used in the Study

Variable Type	Variables
Independent Variables	Rainfall and drought, irrigation coverage, landholding size, soil fertility, input cost, labour shortage
Dependent Variables	Occupational diversification, non-farm employment, livelihood transformation, seasonal migration
Socio-economic Variables	Gender, age, landholding size, primary occupation

Source: Self-generated

7. DATA ANALYSIS

The coding and analysis of the gathered data was done by Microsoft Excel and IBM SPSS Statistics Version 26.0. The data on the socio-economic profile of the respondents, causes of decreased agricultural productivity, and occupational diversification trend were analyzed using descriptive statistical tools such as frequency distribution and percentages.

8. GIS AND SPATIAL ANALYSIS

The GIS approach was adopted for the study of the spatial distribution of the agricultural productivity and the process of livelihood diversification in the district of Bankura. Thematic maps were prepared by the use of QGIS/ArcGIS software on the basis of secondary data obtained from government records.

9. RESULTS AND FINDINGS

The socio-economic details of the surveyed households have been presented in Table 2. This table contains the distribution of respondents according to their gender, age, land holding and occupation. Figure 2 shows the graphical presentation of socio-economic characteristics.

Table 2: Socio-Economic Profile of the Surveyed Households

Characteristics	Category	Frequency	Percentage (%)
Gender of Household Head	Male	108	72.0
	Female	42	28.0
Age Group	18–35 Years	32	21.3
	36–50 Years	58	38.7
	Above 50 Years	60	40.0
Landholding Size	Marginal (<1 ha)	75	50.0
	Small (1–2 ha)	50	33.3
	Medium (>2 ha)	25	16.7
Primary Occupation	Agriculture	64	42.7
	Agriculture + non-farm	46	30.7
	Non-farm Activities	40	26.6
Total		150	100.0

Source: Self-generated

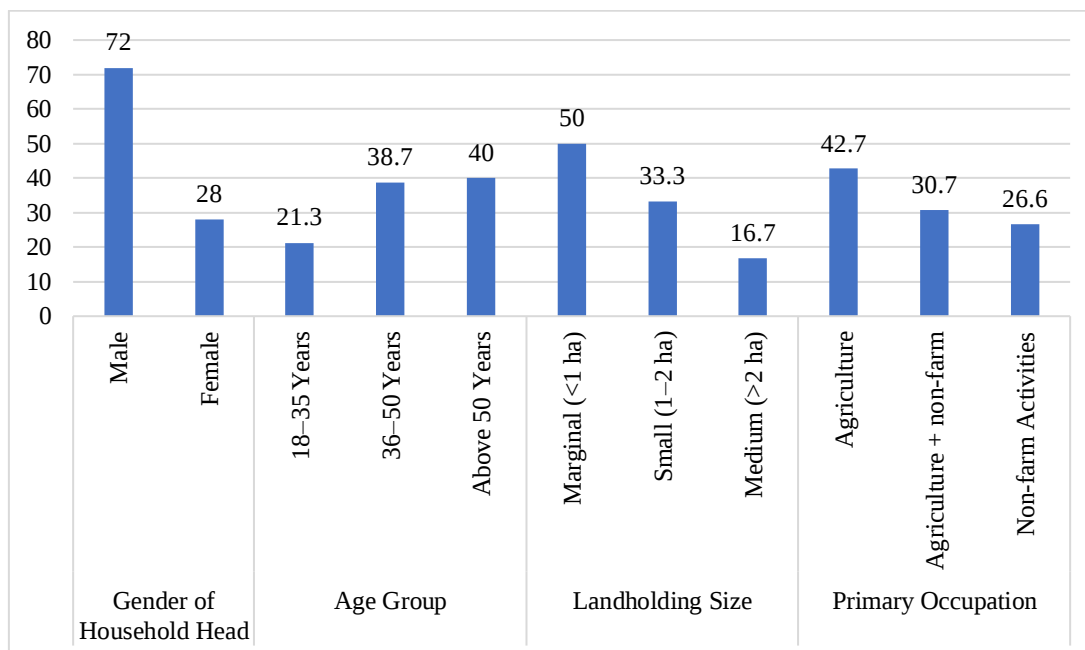


Figure 2: Graphical Representation of Socio-Economic Profile of the Surveyed Households

Source: Self-generated

The findings revealed that most of the households had males as their heads (72.0%), whereas the rest were headed by females (28.0%). The number of respondents belonging to the above 50 years category was more (40.0%). More than half of the households (50.0%) were marginal farmers having below one hectare of land holdings. Even though agriculture was still the main occupation of 42.7% of the respondents, the other 57.3% of the respondents were involved in agriculture along with other occupations (30.7%) and non-agriculture occupations (26.6%).

Table 3 contains the primary causes of low agricultural productivity based on the responses from 150 households that were surveyed in the Bankura district. The table illustrates the main issues influencing agricultural productivity in terms of environment and economics, whereas Figure 3 depicts these factors graphically.

Table 3: Major Factors Responsible for Declining Agricultural Productivity

Factor	Respondents	Percentage (%)
Irregular Rainfall and Drought	118	78.7
Low Irrigation Coverage	106	70.7
Rising Cost of Agricultural Inputs	101	67.3
Small and Fragmented Landholdings	97	64.7
Declining Soil Fertility	91	60.7
Crop Damage due to Climate Variability	86	57.3
Labour Shortage	61	40.7

Source: Self-generated

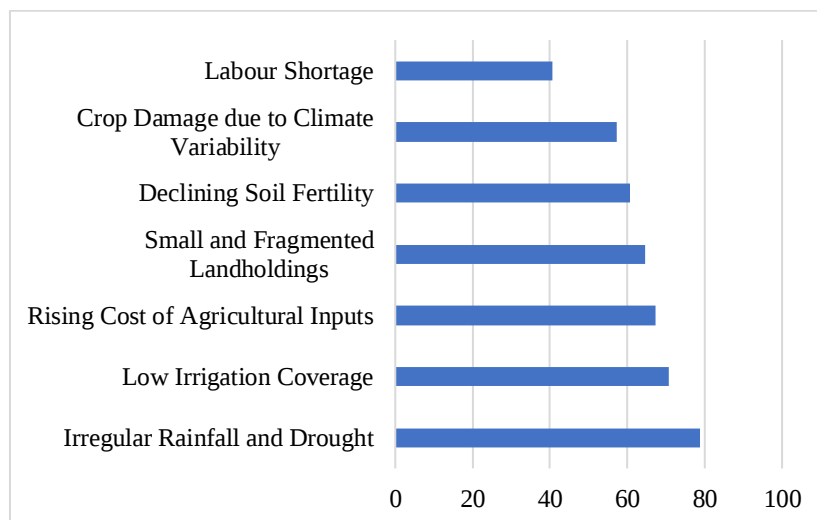


Figure 3: Graphical Representation of Major Factors Responsible for Declining Agricultural Productivity

Source: Self-generated

The results revealed that droughts and irregular rains are the most prominent climatic factors influencing agricultural productivity, with 78.7% of the respondents reporting them. Low coverage of irrigation facilities (70.7%) and escalating cost of agricultural inputs (67.3%) have been the other two prominent economic factors for the decrease in agricultural productivity. The other prominent factors included small and fragmented landholding (64.7%), decreased soil fertility (60.7%), and destruction of crops because of climatic change (57.3%). Labor shortage was reported by 40.7% of the respondents, which was the least cited factor.

Table 4 provides the occupational diversification trend among the 150 households in Bankura district that were surveyed. The table illustrates the number of respondents belonging to different sectors of livelihood activities that denote the change from agricultural to non-agricultural occupations. The livelihood trends are illustrated in figure 4.

Table 4: Occupational Diversification among Rural Households

Present Primary Livelihood	Frequency	Percentage (%)
Agriculture Only	42	28.0
Agriculture + Livestock	22	14.7
Agriculture + Wage Labour	33	22.0
Construction Work	18	12.0
Small Business/Petty Trade	14	9.3
Service Sector Employment	10	6.7
Seasonal Migration	11	7.3
Total	150	100.0

Source: Self-generated

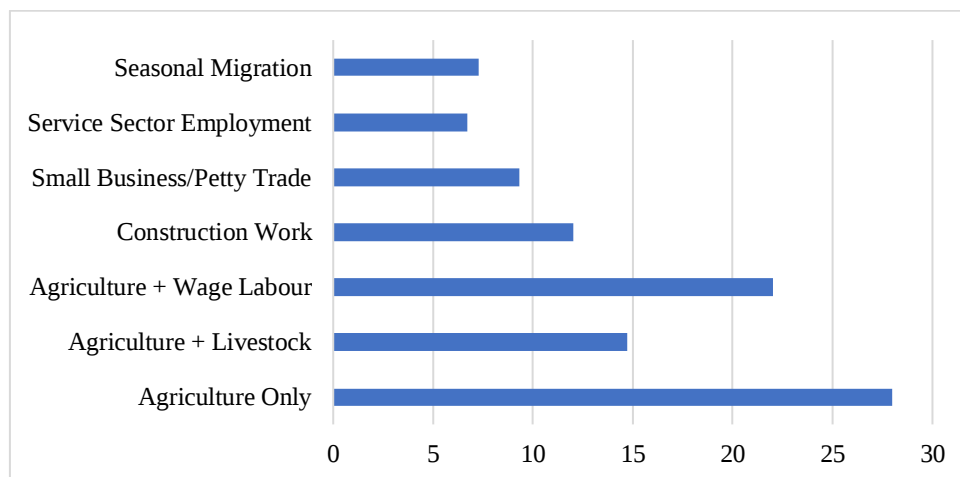


Figure 4: Graphical Representation of Occupational Diversification among Rural Households

Source: Self-generated

The results indicate that only 28.0% of households depended solely on agriculture for their livelihood. A considerable proportion combined agriculture with wage labour (22.0%) or livestock rearing (14.7%), while others were engaged in construction work (12.0%), small business or petty trade (9.3%), service sector employment (6.7%), and seasonal migration (7.3%). These findings suggest that a majority of rural households have diversified their occupations beyond farming, highlighting the growing importance of non-farm employment as a strategy to cope with declining agricultural productivity and improve household income.

10. DISCUSSION

The results of this study show that there has been a clear impact of falling agricultural productivity on livelihood change in Bankura district. The existence of small land holdings, the occurrence of droughts, lack of adequate irrigation facilities, increase in costs of cultivation, and decrease in fertility of soil have made the occupation of farming unviable for earning livelihood. As a result, the earning from farming has declined for rural households and has rendered farming insufficient for subsistence.

Another important observation of the study is that occupational diversification is a major form of adaptation strategy adopted by the rural households. A significant percentage of respondents have engaged themselves in wage labor, animal husbandry, construction, petty business, service sector activities, and migration. It can be concluded from these observations that the rural economy of Bankura district is changing from being purely agrarian to a diverse one in which the contribution of non-farming occupations is becoming increasingly important.

11. LIMITATIONS

There are some limitations in the study, which need to be taken into account while analyzing its outcomes. These limitations do not undermine the importance of the study but point out the framework in which its outcomes should be evaluated.

- The study is based on the sample of 150 rural households from Bankura district, West Bengal; hence, the results cannot be generalized for other areas with different socio-economic and agro-climatic conditions.

- The research used the cross-sectional design and self-reported data of the respondents gathered using the structured questionnaire; hence, the results may not reflect long-term changes in the livelihoods and may be biased.
- GIS-based spatial analysis was performed together with the use of the secondary data; thus, the availability of the secondary data affected the results.

In general, these limitations provide some room for future research to use large sample sizes, long-term analysis, and better spatial data sets. In spite of these limitations, the study gives some valuable insights into the connection between reduced agricultural productivity and livelihood change in Bankura district.

12. CONCLUSION

The research concludes that decreasing agricultural productivity has had a major impact on the livelihood pattern of the rural population of Bankura district of West Bengal. The results show that repeated droughts, erratic rainfall, lack of irrigation facilities, fragmented holdings, falling fertility of soils, and increasing costs of agricultural inputs have resulted in decreased profitability and sustainability of agriculture as the dominant form of livelihood. Consequently, households have turned towards diverse livelihood sources including wage labor, livestock rearing, construction work, petty trading, service sector jobs, and seasonal migration in order to diversify their incomes. The research further explains that occupation diversification has been a very important adaptive strategy which has improved the resilience of the households and has also decreased their dependency on agriculture alone. The shift from an agriculture-based livelihood system towards a diversified rural livelihood system depicts the changing socioeconomic conditions of Bankura district. In all, it is essential that the agricultural productivity should be increased using proper irrigation methods, sustainable agricultural practices, and effective resource utilization while creating diverse sources of non-agricultural employment at the same time.

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